1.	Title of the course	Workshop II
2.	Course number	EA103P
3.	Structure of credits	0-0-3-2
4.	Offered to	UG
5.	New course/modification to	Modification To EA1202/4
6.	To be offered by	Department of Mechanical Engineering
7.	To take effect from	July 2022
8.	Prerequisite	Nil
9.	**Course Objective(s):** At the end of the course, the student shall be able to 1. Explain the constructional details and functions of basic components of Electrical, Electronics, Instrumentation, Communication, Pneumatics and Hydraulics, FRP and Plastic setups. 2. Suggest appropriate Electrical and Electronic connections, Design and troubleshoot Pneumatic and Hydraulic Circuits, Design and Produce different products using FRP & Plastic materials.	
10.	**Course Content:** Electrical, Electronics, Instrumentation & communication: Safety, Difference between Single and three phase, Electrical & Electronic Components and Tools, Measurements of Current, Basic Circuits, Soldering, Ardiuno, Sensors, Designing and Troubleshooting. Pneumatic & Hydraulic: Safety, Parts of Air Compressor, Dyer, FLR, Pump, Accumulator, Close loop and Open loop System, Actuators, DC Valves, Types of valves, Solenoids, LED, Delay on Timer, Circuit Design & Troubleshooting, Application and Maintenance. FRP & Plastics: Safety, Hand tools, Selection of Mould, Material, Preparation of Resin, catalyst and Accelerator, Types of Fibres, Types of Mats, Thermosetting and Thermoplastic, Injection Moulding and Mould Design.	
11.	**Textbook(s):** 1. Howard H G, William E and Dugger Jr, Electricity and Electronics: Lab Manual, Goodheart-Willcox (1989). 2. Anthony E, *Fluid Power with Applications*, Pearson (2018).	
12.	**Reference(s):** 1. Stephen H,The Complete Lab Manual for Electricity, Cengage Learning (2008). 2. Zoya P and Branko D P, Introductory electromagnetics: practice, problems and labs, Prentice Hall (2000). 3. Krishan Chawla K, *Composite Materials*, Springer (2012).	